

Title (en)  
MUTANT POLYHYDROXYALKANOIC ACID SYNTHASE GENE AND METHOD FOR PRODUCING ALIPHATIC POLYESTER USING SAME

Title (de)  
MUTANTES POLYHYDROXYALKANSÄURESYNTHASEGEN UND VERFAHREN ZUR HERSTELLUNG EINES ALIPHATISCHEN POLYESTERS DAMIT

Title (fr)  
GÈNE MUTANT DE L'ACIDE POLYHYDROXYALCANOÏQUE SYNTHASE ET PROCÉDÉ DE PRODUCTION D'UN POLYESTER ALIPHATIQUE À L'AIDE DE CELUI-CI

Publication  
**EP 2594637 A4 20130619 (EN)**

Application  
**EP 10854707 A 20100714**

Priority  
JP 2010061871 W 20100714

Abstract (en)  
[origin: EP2594637A1] A substitution mutation that improves polymerization activity of a polyhydroxyalkanoic acid synthase is identified. At least 1 amino acid residue selected from the group consisting of a histidine residue at position 17, a proline residue at position 71, a valine residue at position 131, a methionine residue at position 205, a leucine residue at position 230, and a proline residue at position 239 of a polyhydroxyalkanoic acid synthase derived from *Alcanivorax borkumensis* is subjected to substitution mutation with another amino acid.

IPC 8 full level  
**C12N 15/09** (2006.01); **C12N 1/15** (2006.01); **C12N 1/19** (2006.01); **C12N 1/21** (2006.01); **C12N 5/10** (2006.01); **C12N 9/10** (2006.01); **C12P 7/62** (2006.01)

CPC (source: EP US)  
**C12N 9/1029** (2013.01 - EP US); **C12P 7/625** (2013.01 - EP US)

Citation (search report)

- [AD] WO 2008062999 A1 20080529 - LG CHEMICAL LTD [KR], et al
- [A] CHRISTOPHER T NOMURA ET AL: "PHA synthase engineering toward superbicatalysts for custom-made biopolymers", APPLIED MICROBIOLOGY AND BIOTECHNOLOGY, SPRINGER, BERLIN, DE, vol. 73, no. 5, 23 November 2006 (2006-11-23), pages 969 - 979, XP019472493, ISSN: 1432-0614, DOI: 10.1007/S00253-006-0566-4
- [A] K. TAKASE ET AL: "Enhanced Synthesis of Poly(3-hydroxybutyrate) in Recombinant Escherichia coli by Means of Error-Prone PCR Mutagenesis, Saturation Mutagenesis, and In Vitro Recombination of the Type II Polyhydroxyalkanoate Synthase Gene", JOURNAL OF BIOCHEMISTRY, vol. 133, no. 1, 1 January 2003 (2003-01-01), pages 139 - 145, XP055061796, ISSN: 0021-924X, DOI: 10.1093/jb/mvg015
- [A] SURIYAMONGKOL ET AL: "Biotechnological approaches for the production of polyhydroxyalkanoates in microorganisms and plants - A review", BIOTECHNOLOGY ADVANCES, ELSEVIER PUBLISHING, BARKING, GB, vol. 25, no. 2, 26 January 2007 (2007-01-26), pages 148 - 175, XP005862313, ISSN: 0734-9750, DOI: 10.1016/J.BIOTECHADV.2006.11.007
- [A] J. S. SABIROVA ET AL: "Proteomic Insights into Metabolic Adaptations in *Alcanivorax borkumensis* Induced by Alkane Utilization", JOURNAL OF BACTERIOLOGY, vol. 188, no. 11, 1 June 2006 (2006-06-01), pages 3763 - 3773, XP055061750, ISSN: 0021-9193, DOI: 10.1128/JB.00072-06
- See references of WO 2012008023A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

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**EP 10854707 A 20100714**; JP 2010061871 W 20100714; JP 2011553215 A 20100714; US 201013809536 A 20100714